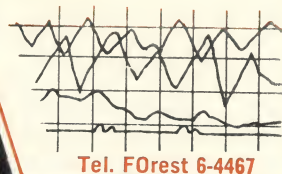


# ALDEN ELECTRONIC AND IMPULSE RECORDING EQUIPMENT COMPANY INC.\*

Alden Research Center  
Westboro • Massachusetts



Tel. FOrest 6-4467

## SPECIFICATION SHEET

## ALDEN FACSIMILE RECORDER 9225

### ALDEN DUAL MODE (APT AND WEATHER CHART) FACSIMILE RECORDER #9225

The Alden Model #9225 Facsimile Recorder is designed for the APT (Automatic Picture Transmission) ground acquisition system. The design objective is to provide a low cost, simple, reliable system best suited to Weather Station operation. It is ideally suited as the facsimile recorder output of the NASA APT system . . . or for groups designing their own systems.

The recorder is a plug-in unit modification of the standard Alden 11" Facsimile Weather Map Recorder widely used in portable and mobile weather stations, (Model 9203A). It is dual mode for reception of the direct APT weather satellite cloud cover picture transmissions, yet can be switched to receive all standard U. S. Weather Bureau weather chart transmissions.

#### APT Picture Mode

Running at 240 RPM in the APT mode, the recorder serves as the direct recording facsimile output for the APT (Automatic Picture Transmission) ground acquisition antennae and receiver systems—providing excellent tone shade pictures enlarged to  $10\frac{1}{2}'' \times 10\frac{1}{2}''$  of the weather satellite cloud cover photo transmissions. The enlarged pictures are recorded in warm, rich, sepia tone shade (brown with a touch of red) that are permanent in shading and especially faithful to the lighter shades when recorded on Alfax "A2" paper. The color is in the area of the color spectrum best suited for interpretation of the subtle variations in picture tone shades. The enlargement of the pictures gives high resolution of small details permitting better interpretation of the pictures.

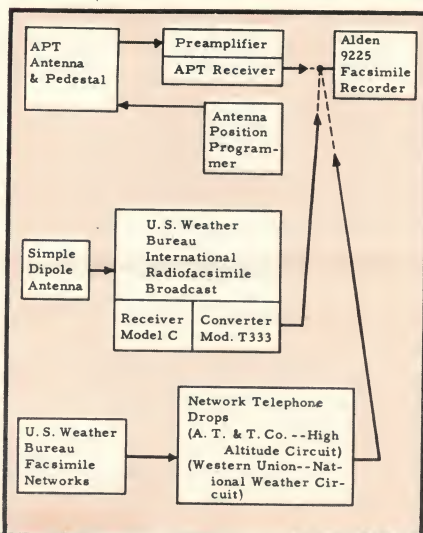
#### Facsimile Weather Map Mode

Running at 120 RPM in the weather map mode, the recorder can be used to record all standard U. S. Weather Facsimile Network transmissions as well as the U. S. Weather Bureau international radio transmissions. The weather maps recorded are handy folder-size at  $10\frac{1}{2}''$  width . . . having crisp, clear sepia markings on a clean, white background when recorded on the Alfax type "A2" recording paper.

The alternate use to receive weather charts between times of satellite passes or during satellite blackout reduces equipment cost through fuller utilization. It can provide the isolated APT ground acquisition station with the necessary standard U. S. Weather Bureau transmission of satellite orbit charts, the convenience of the satellite NEPHANALYSIS, as well as any other desired weather chart information. In the fully equipped weather station, it provides a built-in emergency backup for standard facsimile weather chart recorders.



Change from APT to Weather Map Recording Mode is accomplished by simple electrical switching. Automatic start, phase and stop is provided for both the APT and Weather Map Recording Modes.

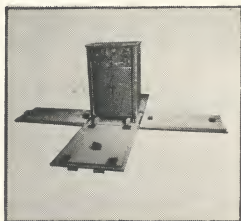


\*Alden Electronic & Impulse Recording Equipment Co., Inc. is a manufacturer's manufacturer working under Alden Research Foundation's licenses and engineering agreements for the manufacture and sale of facsimile systems, recorders, scanners and components with Patents 2540081, 2621999, 2655427, 2789029, 2776183, 2776181 — Others Pending —

## Outstanding Features

As with all Alden facsimile equipment design, the recorder is shipped completely intact—ready to roll-in, set-up, connect—to begin its clean, quiet and automatic operation as soon as received.

The recorder is shipped in a special case to insure safe arrival and to simplify installation. Special Alden clamps and lock-in devices permit shipping with all components in place. Simply drop sides of case—roll to point of use and plug in to power and signal lines for immediate operation.



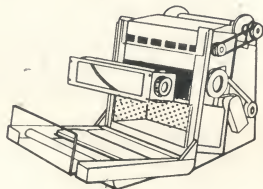
Sides of case quickly collapsed —



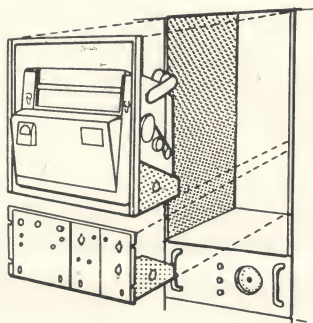
Recorder rolled to point of use.

For shipment, the recorder head is placed in the lower cabinet space of the Uni-Rack. It can be removed easily and placed on top of the cabinet or at any spot within the length of the plug-in cable extension. When recorder head is removed from the Uni-Rack, 22 inches of cabinet space height for paper and other storage is available—or alternately can be used for mounting additional accessory electronics such as the Model C facsimile radio and T333 facsimile converter electronics.

It has been designed to be extremely simple to operate and maintain. All electronics are transistorized on slide-in unit chassis with simple, front panel indicators for first level troubleshooting. All in/out leads are clearly identified on back of chassis with appropriate test information at their back connectors. All mechanical elements are unitized and designed for plug-in servicing or replacement. Factory back-up for service or updating is thereby assured for installations anywhere in the world.



Major mechanical and electronic components can be quickly and easily removed from the unit for replacement and/or repair.

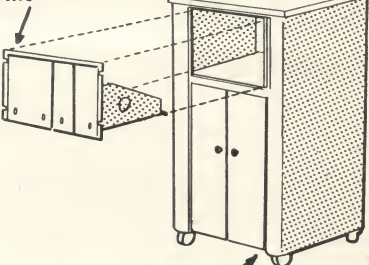


It can also be mounted in a standard rack with the special rack adapter provided.

### The Recorder is comprised of three basic elements:

#### 1. The Recorder Head

#### 2. The Electronics Unit



#### 3. Mobile Uni-Rack

## SPECIFICATIONS

	APT Ground Station Mode	Weather Map Mode
Helix Sweep RPM - Change speed by selector switch	240 RPM	120 RPM
Paper Feed Rate Selectable by switch	3.222 inch/min.	1.450 inch/min.
Printing width	10½"	10½"
Carrier Frequency	2.4 KC	2.4 KC or 1.8 KC
Modulation—additional filters may be used for vestigal system	A. M. double side band	A. M. double side band
Modulation sense selectable by switch	Maximum carrier for White Minimum carrier for Black	Maximum carrier for Black Minimum carrier for White
Start Signal selectable by switch	Receipt of 2.4 KC carrier from satellite	Receipt of amplitude modulated 300 CPS on carrier
Stop Signal	Cessation of carrier	Receipt of 450 CPS on carrier
Automatic phasing. Phasing signal consists of maximum carrier interrupted once each scan line for 12.5 MS. Start of interruption corresponds to start of scanning.	Initiated by 300 CPS start signal accomplished in 5 secs. 240 RPM	Initiated by 300 CPS start signal accomplished in 10 secs. at 120 RPM.
Automatic Gain Control	Sets up on carrier during phasing	Sets up on carrier during phasing
Input Impedance	600 ohms balanced or 200 ohms when extra jacks feed 2 other 600 ohm units	600 ohms balanced to ground
Input Range	0 to -30 DBM	0 to -30 DBM
Precision AC for motor drive	60 CPS $\pm$ 5 parts per million 20 to 50 C	60 CPS $\pm$ 5 parts per million 20 to 50 C
Fast Paper advance 3 position switch	Runs copy clear of recorder at start and stop, plus manual advance	Runs copy clear of recorder at stop, plus manual advance
Paper	Alfax type "A2"	Alfax type "A2"
Power	115 AC, 50 or 60 CPS, 150 watts, is standard 230/115 V AC, 50 or 60 CPS step down transformer on request at \$25 additional cost.	



# THE ALDEN DUAL MODE (APT/Weather Chart) FACSIMILE RECORDER 9225

for —APT ground acquisition receiving systems.  
—Standard USWB facsimile nets.

## SPECIFICATIONS

The Alden 9225 Recorder is shipped in a special case designed to insure safe arrival and to simplify installation. The sides can be quickly collapsed, following simple instructions stenciled on side of case, and the recorder then rolled away.

The dis-assembled case stores compactly and should be used whenever equipment is to be transported.

### Included with the recorder are:

Twelve . 100' rolls of Alfax electrosensitive Paper type "A2"

Two . . . Spare Helix Wires

One . . . Spare Helix Strips

One . . . Spare Electrode Loops

Net Weight . . . 217 lbs.

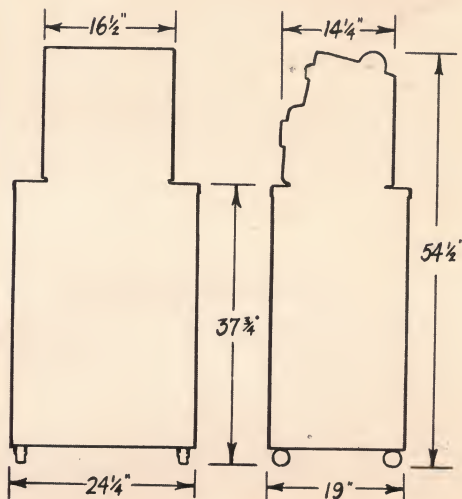
Shipping weight . . . 367 lbs.

Crate dimensions . . . 41" x 24" x 29"

### PRICE COMPLETE F.O.B. Brockton, Mass.

Additional wearable parts can be ordered from Alden Electronic & Impulse Recording Equipment Co., Inc., at prices below, F.O.B. Westboro, Mass. Helix Wire for Alden Recorder . . \$2.00 ea. Helix Strip for Alden Recorder . . \$11.50 ea. Electrode Loop for Alden Recorder. \$12.00 ea.

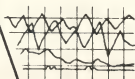
### Recorder Dimensions



NOTE: Prices subject to change without notice. All orders subject to acceptance by Alden Electronic & Impulse Recording Equipment Co., Inc., in accordance with Alden Standard Sales Proposal of 11/23/55. Export prices slightly higher.

**ALDEN ELECTRONIC AND  
IMPULSE RECORDING EQUIPMENT COMPANY INC.**

Alden Research Center Westboro, Mass. Telephone Forrest 6-4467



**BULK RATE**

**U. S. POSTAGE**

**PAID**

Westboro, Mass.

PERMIT No. 346

*Please Route  
to —*

**Chief Engineer and  
Other Key Personnel**

1. \_\_\_\_\_
2. \_\_\_\_\_
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4. \_\_\_\_\_

# *facsimile communication news*

## • APPLICATIONS • SYSTEMS • TECHNIQUES

For Management, Systems Men, Communication Engineers interested in speeding the high priority graphic communications of government, industry and commerce.

*...business problems solved  
by ALFAX PAPER  
and ALDEN  
RECORDING  
TECHNIQUES!*



### *in this issue . . .*

- **"Broad Volume"** of high priority graphic information, any size, transmitted with most practical utilization of facilities!
- **"Command Decision"** business information . . . transmitted in seconds of circuit time . . . !
- **"Supermarket Principle"** . . . customer does the work . . . aids banking firms in cutting costs!
- **Automatic "Order Write"** . . . customer does all the paper work . . . !

These new breakthroughs in instantly readable information can increase efficiency and profits in your organization.



## BACKGROUNDS



**In facsimile . . . the key to cost is utilization . . . of transmission lines and equipment. So far the biggest expense has been line cost . . . the greatest bar to full utilization of systems has been the lack of flexibility in equipment. . .**

**Line costs are now plummeting . . .** . . . through the great increase in private "voice" networks, the recent availability of private microwave channels, and the filing of "Telpak" tariffs by A. T. & T. Co.

### **Alden facsimile equipment has the proven flexibility . . .**

to take documentary copy of any size and shape, to operate on any channel (microwave, "voice" channel, broad channel), to operate at any speed (from 8/min./letter to 2 letters/min. or at any higher speed) with proven, practical designs.

**Thus, Alden equipment can handle the entire spectrum of high priority graphic information . . . and can load match the traffic of any system.**

Designed as self-contained, modular units with low maintenance and running costs Alden Scanners can be placed wherever information is developed . . . fed into the facsimile communication system or network . . . and recorder placed wherever information needs to be utilized. Alden thereby has the ability to provide highest utilization at the lowest cost of any facsimile equipment.

### **Alfax Paper and Alden Recording Techniques**

The ability to get highest utilization with Alden equipment does not come about by accident, but is made possible by the techniques Alden has pioneered.

From 1930 on, Alden has continuously engaged in facsimile development and application. Most significant was the development of Alfax type "A" recording papers . . . the first and only stable, high speed electro-sensitive paper which

combined with Alden "adjusterless" recording techniques and simplified Flat Copy Scanning . . . form the basis for the important breakthrough in practical facsimile equipment and systems.

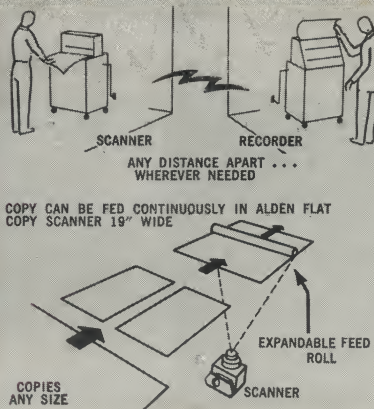
**In 1946** Alden Electronics was set up as a manufacturer's manufacturer to supply systems, equipment, component recorders, scanners and their elements to users, O. E. M. and R & D groups in facsimile and instant graphic recording fields.

**TODAY** Alden Electronics equipment is standard throughout two national U. S. Weather Bureau facsimile networks . . . backed up by over 200 service centers throughout the nation. Alfax Paper and Alden Recorders are also superimposing a whole new strata of instant graphic "quick see" recording devices in every scientific field from Oceanography to Radio Astronomy.

It is the fastest growing company in the facsimile field and is being joined by outstanding leaders who find that Alden Recording Techniques and Alfax "A" Papers can expand and develop their markets. ALDEN ELECTRONIC & IMPULSE RECORDING EQUIPMENT COMPANY, INC. operating under the "know how", techniques and agreements of the Alden Research Foundation can serve as the key to providing every essential element from basic parts to complete systems in the facsimile field.

*We invite your inquiries.*

## The "Broad Volume" of High Priority Graphic Information, Any Size, Transmitted between Plants, Branches or Offices with Most Practical Utilization of Facilities!



### The problem:

Organizations with large service networks or highly diverse activities spread throughout branch plants, offices, warehouses, service and distribution centers have had to pay a *premium in time and money* for the dissemination of up-to-date information.

Sporadically, special facsimile system designs, based on high transmission speeds, have been offered in the hope of overcoming this costly problem. Unfortunately even the largest organizations would be hard put to maintain the tremendous volume of *limited format material* necessary for practical operation.

### Utilization is the key to cost in any facsimile installation.

Although line costs are dropping . . . a relatively high message volume is necessary for the most practical operation since facsimile costs go down proportionately as message volume increases. This high volume, in most all cases, must be built up by including all types of graphic data such as: regular changes in

engineering drawings, inventory and price lists, layouts, market prices and merchandising techniques or any graphic messages or data such as: letters, invoices, charts, memos, records, graphs, etc.

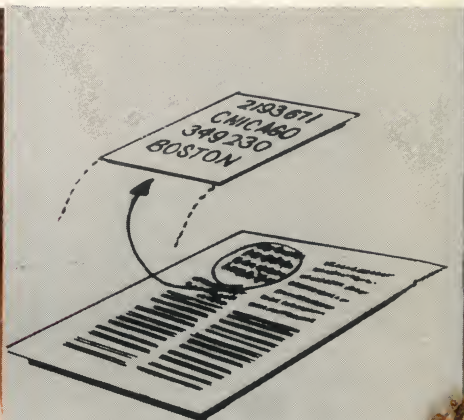
Only Alden 19" Facsimile Equipment has the *proven* flexibility to take documentary copy of any size and shape . . . to operate at any speed, on any channel . . . with proven, practical designs.

Only Alden 19" Facsimile Equipment can load match the traffic of any installation. Since Alden equipment is not fixed at high or low speed — the most practical rate for the load can be selected from standard components. Through the use of modern tape equipment Alden 19" facsimile has the ability to store at one speed and transmit at another for complete flexibility and highest utilization of any systems layout.

Alden 19" Scanners and Recorders are shipped intact — ready to roll-in, plug-in for immediate operation — wherever information is needed.



**The Really Important "Command Decision" Business Information Transmitted In Second Of Circuit Time — Without Time-Wasting Reorganizing Or Retyping.**



**The problem:**

The vital information in business communications is often short, terse, graphic — signature for verification, money amounts; simple sketches, instructions, commands, yes and no decisions. These bursts of essential information have direct money leverage.

Wherever there is a need for selective high-speed transmission of data — in business as in Traffic Control, Civil Defense, Railway Or Plant Operation — Alden equipment speeds communications, integrates systems, controls transactions.

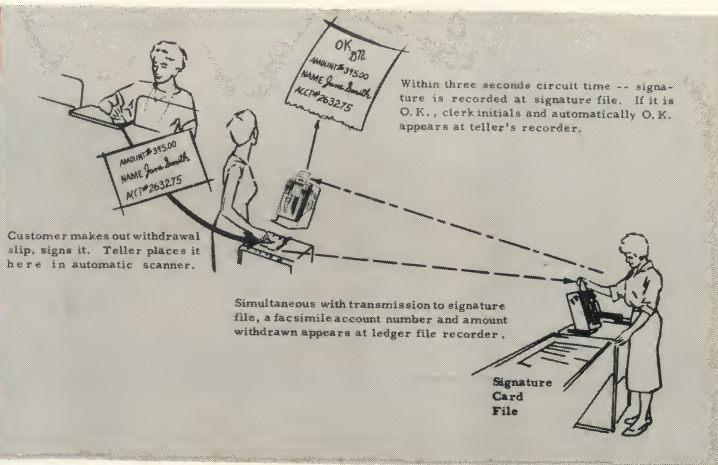
Alden Selective Dispatch Facsimile Systems using ALFAX paper are the answer for anyone who wants to get graphic

information from one place to another in the least possible time. They take the heart of vital data from any size copy and transmit it instantaneously to its critical destination — via plant wiring systems, telephone lines, radio or microwave. In less than five seconds the facsimile is delivered for decision and action. Scanning is simple — recording is automatic — recorders start up, record, and stop automatically on electronic command from the distant scanner.

The ALFAX copy is crisp and clear (rich, sepia markings on clean, white background). It can be written on, erased, handled, reproduced by Bruning or Ozalid, retransmitted by facsimile, and stored permanently. And the priceless original never leaves the files.



## Supermarket Principle — “The Customer Does The Work” — Aids Banking Firms To Cut Costs.



### The problem:

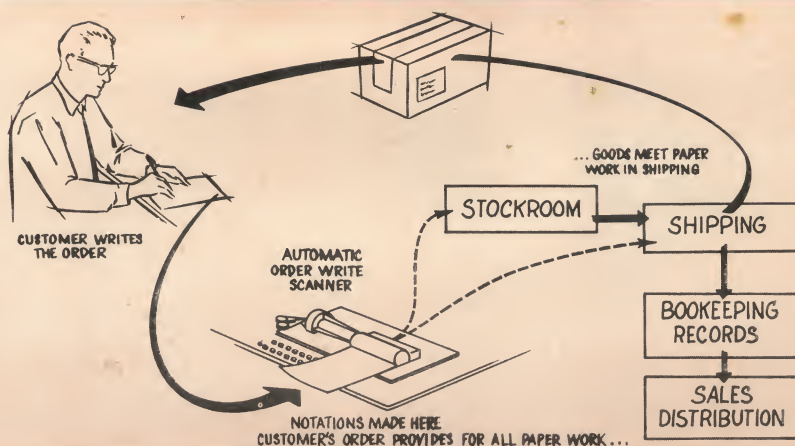
Bankers feel their operations and expansion are hampered by rising personnel and space costs due to wasted teller effort and duplication of record-keeping facilities at branch offices.

This year, in a limited number of progressive banks, Alden Automatic Bank Facsimile Systems will open a new epoch in meeting this challenge of rising costs. It's as simple as this — the customer does all the work. The customer makes out his withdrawal or deposit slip — at the home bank or at any branch. Everything else in the transaction is completely automatic. The teller's Alden Optical Scanner automatically transmits an exact facsimile of the transaction slip to the cen-

tral signature and ledger file — in less than three seconds of transmission time. At the central file the crisp, clear ALFAX facsimile is received. When the signature is verified, written OK on facsimile copy is transmitted to the teller's Alden Recorder. The entire transaction is completed within a few seconds. Not only are bank personnel costs drastically cut, but long customer waiting lines are abolished.

This simple automatic system also provides controlled figures at the teller's cage at the end of the business day — on sharp, crisp ALFAX. And in the event of errors, complete facsimile records are permanently available for checking.

## The Customer Does All the Paper Work . . . He Writes the Order for You . . . Alden Automatic "Order Write" Equipment is as Simple as This . . .



The customer does all the paper work — He writes the order and does all the paper work for you. Alden Automatic "Order Write" equipment is a simple system which a certain number of mail order organizations will install this fall.

They will supply in their catalogues a 5-inch wide order blank. The customer writes and mails his order. It is received, edited, checked, and with a few penciled notes, it goes to an Alden "Order-Write" scanner; from here on all the rest of the paper work is automatically produced "at point of use".

In each exact spot in the stockroom where material is located, a facsimile of the order appears. The goods then move to shipping. Here the label, packing slip, and all required papers are already there including duplicate invoices and order acknowledgment, if required.

From "position coding" marked on the order, bookkeeping, sales distribution

and records can automatically take place at their centers or point of use wherever located. Thus an order does not require any retyping or writing. Customers cannot complain about order being misinterpreted or numbers transposed in retyping. This system is an example of simultaneous, instant distribution of duplicate copies at point of use.

### **The Alden Automatic Order Write System is not limited to Mail Order Use.**

The Alden Automatic "Order Write" Equipment System in manufacturing is often tied in with production control, accomplishing many things never before possible; here again, this coming year, a limited number of pioneering installations will be made. Because all Alden design is of the modular building block concept, it is flexible to meet any requirement and capable of being produced economically for the anticipated avalanche of requirements in '64-'65.



## If Weather Affects your Business ...

A most important use for Alden equipment in business relates to the weather. Many businesses are very definitely affected by the weather and so utilities and others who particularly want the best information in regard to storms can tie in with the U. S. Weather Bureau Network with Alden Weather Map Facsimile Recorders. The purpose of receiving these weather maps is not necessarily for complete forecasting, but to be direct-connected so as to analyze and evaluate particularly the marginal forecasting and to have direct information on approaching storm conditions when all lines of communications are being used to capacity.

Fortunately the same recorder that can receive weather maps is automatically turned on by a clock to receive the



selected maps wanted, and at other times can be used for part of the interplant or between branch communications system.

If weather affects your business, it is surprising how simple and inexpensive it is to have the vital weather information when most needed.

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## Start Saving Now . . . Utilize Facsimile Communications For Your Full Message Traffic!

Cost is relative to each individual operation but to determine the real value of facsimile communications in your operations and the most practical type of system . . . analyze the full message traffic of the entire operation including branch plants, warehouses and offices. Look at all existing message traffic against the most desirable information flow for speedier transactions and decisions and more rapid dissemination of facts and data.

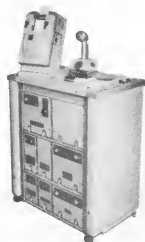
Organizations already using private lines can easily get started with facsimile communications and realize a tremendous return on investment by employing the little used nighttime hours for transmission. Graphic messages and data can be stored on tape during the day and automatically transmitted during the night . . . ready for use next morning — where needed — when needed.

Organizations with large service networks can get their investment returns by highest utilization of available line

time. Where a quick burst of vital information is needed only the pertinent portions of broad messages or formats are selectively scanned by equipment tailored to their needs or already developed such as the High Speed Selective Dispatch System, Automatic Bank Facsimile System, or Automatic Order Write System.

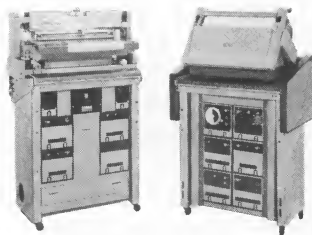
Alden Flat Copy Scanners make it possible to send graphic material of any length, width or thickness between offices, branches and departments over any communication link at any speed.

Alden recorders are slave to the scanner (they start and stop automatically) and as they are self-contained the number of units in circuit can be varied to match peak work loads. Modular construction makes it easy to tailor installations to the job. Plug-in Unit Construction Techniques make equipment easy to service; Alden Recording Techniques simplify operation for anyone with a minimum of instruction.



#### • ALDEN DISPATCH FACSIMILE SYSTEM

Specifically, there are the telegraphic or dispatch messages — “yes” or “No” information which is met by the Alden Dispatch System. An instance is where a savings bank transmits a balance, an account number, and/or a signature in record form instantly to a teller’s position. Further, Alden scanners may select a paragraph of a letter — with a penciled question mark — a rider on an insurance policy — or anything to be duplicated and it will instantly be received at a “point of use” or decision center. A “yes” or “no” penciled or an expanded annotation to the note may be instantly retransmitted back to the questioner.



#### • ALDEN 19" FACSIMILE SYSTEM

Between plants, all night long, pertinent graphic data, confidential financial summaries — all the things for which you wait days for answers by mail — can be instantly reproduced at the plant, branch, important supply or customer’s office, often transmitted at night for early morning use. No limit to size, length — two letters at a time — full size newspaper page, drawings — columnar statistics, etc.

Thus airplane manufacturing companies are important users with their many changes in drawings. They use the 19" Flat Copy Scanners and Alden Automatically controlled recorders operating over leased telephone lines saving in many installations directly and in intangible ways thousands of dollars weekly.



#### • "ORDER WRITE" and INTERDEPARTMENT INSTRUCTION

Tremendous returns in Alden 5" scanners and recorders provide for automatically written order and production control systems.

For illustration, the automobile manufacturer with a body color and other variations on a chassis — edits the manufacturing order for correctness — instantly, with no typing, no telephoning, no possibility of mistake, the order as a graphic record is instantly produced in every department involved; so no costly, freak cars coming off the line as before facsimile replaced the telephone or teletype messages.